REMARKS

This responds to the Office Action mailed on May 25, 2007. Reconsideration is respectfully requested.

Claims 1, 2, 8, 9, 15, 18, 21 – 23, 25, 28, 29, 35, 38, and 41 – 46 are amended, no claims are canceled, and no claims are added; as a result, claims 1 – 46 remain pending in this application.

Submission of Formal Drawings

Three sheets of formal drawings are submitted herewith in connection with the above-identified application. Each sheet is identified as "REPLACEMENT SHEET." It is believed that the drawings are in compliance with 37 CFR 1.84. No amendments are made to the drawings.

Allowable Subject Matter

Claims 8-15, 18-20, 28-35 and 38-40 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 8 has been rewritten in independent form including all of the limitations of base claim 1 and any intervening claims 2 and 7. Therefore claim 8 is believed to be in condition for allowance.

Claim 15 has been rewritten in independent form including all of the limitations of base claim 1 and any intervening claim 2. Therefore claim 15 is believed to be in condition for allowance.

Claim 9 has been rewritten in independent form including all of the limitations of base claim 1. Therefore claim 9 is believed to be in condition for allowance. Claims 10 – 12 are believed to be in condition for allowance at least because of their dependency on claim 9.

Claim 18 has been rewritten in independent form including all of the limitations of base claim 1. Therefore claim 18 is believed to be in condition for allowance. Claims 19 and 20 are believed to be in condition for allowance at least because of their dependency on claim 18.

Claim 28 has been rewritten in independent form including all of the limitations of base claim 21 and any intervening claims 22 and 27. Therefore claim 28 is believed to be in condition for allowance.

Claim 35 has been rewritten in independent form including all of the limitations of base claim 21 and any intervening claim 22. Therefore claim 35 is believed to be in condition for allowance.

Claim 29 has been rewritten in independent form including all of the limitations of base claim 21. Therefore claim 29 is believed to be in condition for allowance. Claims 30 – 32 are believed to be in condition for allowance at least because of their dependency on claim 29.

Claim 38 has been rewritten in independent form including all of the limitations of base claim 21. Therefore claim 38 is believed to be in condition for allowance. Claims 39 and 40 are believed to be in condition for allowance at least because of their dependency on claim 38.

§112 Rejection of the Claims

Claim 25 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claim 25 has been amended to correct the antecedent basis issue noted by the Examiner.

§101 Rejection of the Claims

Claims 44-46 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 44 – 46 have been amended to recite a computer-readable medium that stores instructions for execution by one or more processors. Accordingly, claims 44 – 46 are directed to statutory subject matter.

§102 Rejection of the Claims

Claims 1-7, 16, 17, 21-27, 36, 37 and 41-46 were rejected under 35 U.S.C. § 102(e) as being anticipated by Subramaniam (U.S. 2005/0215264 A1).

Applicant's claim 1 is directed to selecting a data rate of a multicarrier communication channel comprising a plurality of individual orthogonal subcarriers. In accordance with claim 1,

signal to noise ratios (SNRs) are calculated for the *individual* subcarriers of the multicarrier communication channel from channel state information and a transmit power level, and a subcarrier capacity is calculated for the individual subcarriers from the SNRs. A throughput is estimated for the multicarrier communication channel for each of a plurality of data rates from a sum of the individual subcarrier capacities and a predicted packet error ratio (PER) for each of the data rates. *One of the data rates is selected based on the estimated throughputs*. The individual subcarriers are to have a uniform modulation and code rate based on the selected data rate. Claims 21, 41, and 44 have similar recitations.

Applicant's claim 1 provides reduced feedback by selecting a *uniform data rate for all* data subcarriers of a multicarrier communication channel, even though each individual subcarrier may have a different SNR and different capacity. The uniform data is selected for all subcarriers based on the individual SNR calculations for the individual subcarriers. Significant feedback would be required if a different modulation and coding scheme were selected for each subcarrier based on the calculated SNR for each subcarrier.

Subramaniam, on the other hand, does not address the issue associated with different channel conditions of *individual subcarriers*. Subramaniam determines a data rate for each transmit antenna based on post detection SNR (see operation 314 of FIG. 3). The SNR in Subramaniam is the SNR of the channel bandwidth used by the antenna, not individual subcarriers. Applicants find no mention anywhere in Subramaniam that SNRs are calculated for *individual subcarriers* of a multicarrier communication channel. Subramaniam states that his techniques are applicable to MIMO OFDM systems [see Subramaniam paragraph [0093] which are multicarrier systems. In these systems, according to Subramaniam, one symbol stream may be transmitted from all subbands of each transmit antenna using OFDM processing. In MIMO OFDM, each subband comprises a group of subcarriers and no distinction is made between the individual subcarriers of a subband.

Furthermore, Applicant finds no disclosure in Subramaniam for estimating a throughput for a multicarrier communication channel for *each* of a plurality of data rates from a sum of the individual subcarrier capacities and a predicted packet error ratio (PER) for each of the data rates, as recited in claims 1, 21, 41 and 44. Furthermore, Applicant finds no disclosure in

Subramaniam to select one of the data rates is selected based on the estimated throughputs, as recited in claims 1, 21, 41 and 44.

In view of the above, Applicant submits that independent claims 1, 21, 41 and 44 are allowable over Subramaniam. Dependent claims 2 – 6, 16 and 17 are also believed to be allowable at least because of their dependency on claim 1. Dependent claims 22 – 26, 36 and 37 are believed to be allowable at least because of their dependency on claim 21. Dependent claims 42 – 43 are believed to be allowable at least because of their dependency on claim 41, and dependent claims 45 – 46 are believed to be allowable at least because of their dependency on claim 44.

Claims 2, 22, 42 and 45 further distinguish over Subramaniam by reciting that one of the data rates is initially selected based on a combination of one of a plurality of modulations and one a plurality of code rates associated with a highest of the estimated throughputs. Claims 2, 22, 42 and 45 further distinguish over Subramaniam by reciting that a next higher data rate is selected when a predetermined percentage of the individual subcarriers have capacities greater than the initially selected data rate, and that a next lower data rate is selected when a predetermined percentage of the individual subcarriers have capacities lower than the initially selected data rate. These recitations are not taught, suggested, or motivated by Subramaniam since Subramaniam does not determine capacities for individual subcarriers.

RESERVATION OF RIGHTS

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicant's silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or

assertion is based upon the Examiner's personal knowledge, rather than any objective evidence

of record as manifested by a cited prior art reference, Applicant timely objects to such reliance

on Official Notice, and reserves all rights to request that the Examiner provide a reference or

affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all

rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of

priority of the present patent application, and to request rejoinder of any withdrawn claim, as

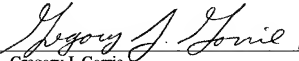required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and

notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's

attorney ((480) 659-3314) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account

No. 19-0743.

Respectfully submitted,

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